

IN THE CLAIMS

1. (currently amended): A radio frequency/microwave junction-type circulator, comprising:
- a plurality of signal ports;
  - a plurality of junctions connected in cascade and configured to provide a plurality of transmission paths between the signal ports, each junction including a conductor element patterned to correspond to at least a portion of the plurality of transmission paths;
  - a ferrite component configured to overlay the plurality of junctions;
  - an oval shaped permanent magnet arranged in relation to the ferrite component so as to generate a magnetic field in the ferrite component, thereby causing non-reciprocal operation of the plurality of transmission paths between the signal ports; and
  - at least a first pole piece disposed between the permanent magnet and the ferrite component.
2. (previously presented): The circulator of claim 1 wherein the ferrite component comprises two ferrite elements and the conductor elements are sandwiched between the two ferrite elements.
3. (original): The circulator of claim 1 wherein the conductor elements comprise corresponding portions of a single conductor component.
4. (original): The circulator of claim 1 wherein the plurality of junctions, the ferrite component, and the permanent magnet are disposed in a metal housing.
5. (previously presented): The circulator of Claim 1, wherein the metal housing includes a cover and a base portion and the circulator further comprises a second pole piece disposed

between the base portion of the housing and the conductor elements, and a cover return component disposed between the housing cover and the permanent magnet.

6. (original): The circulator of claim 5 wherein the first and second pole pieces, the permanent magnet, the metal housing, and the cover return component are arranged in relation to each other so as to form a magnetic circuit for generating the magnetic field in the ferrite component.

7. (original): The circulator of claim 2 further including a dielectric constant medium disposed between the ferrite elements and a ground plane disposed between the ferrite component and the permanent magnet.

8. (original): The circulator of claim 7 wherein the ferrite elements, the dielectric constant medium, the conductor elements, and the ground plane are arranged in relation to each other so as to form a radio frequency/microwave circuit for causing the non-reciprocal operation of the transmission paths when the magnetic field is generated in the ferrite component.

9. (currently amended): A method of manufacturing a radio frequency/microwave junction-type circulator, comprising the steps of:

providing a plurality of junctions connected in cascade and configured to form a plurality of transmission paths between a plurality of signal ports, each junction including a conductor element patterned to correspond to at least a portion of the plurality of transmission paths;

providing a ferrite component configured to overlay the plurality of junctions;

providing an oval permanent magnet arranged in relation to the ferrite component so as to generate a magnetic field in the ferrite component, thereby causing non-reciprocal operation of the transmission paths between the plurality of signal ports; and

providing a first pole piece disposed between the permanent magnet and the ferrite component.

10. (original): The method of claim 9 further including the step of disposing the plurality of junctions, the ferrite component, and the permanent magnet in a metal housing.

11. (previously presented): The method of Claim 10 further including the steps of providing a second pole piece disposed between a base portion of the metal housing and the conductor elements, and providing a cover return component disposed between a cover of the metal housing and the permanent magnet.

12. (original): The method of claim 9 further including the steps of providing a dielectric constant medium between first and second ferrite elements of the ferrite component, and providing a ground plane disposed between the ferrite component and the permanent magnet.